Top Level

Top Level

System and I/O Connectors

System and I/O Connectors

USB_VBUS	>16 mil
VEXT_DC	50 mil
VBATT_INT	50 mil
VPH_PWR (sourse)	50 mil
ICHARGE	20 mil
VPH_PWR to PA	>30 mil
VREG_MSMP	15 mil
VREG_MSMA	15 mil
VREG_MSMC	20 mil
VIB_DRV	15 mil
VPH_PWR to others	>15 mil
VREG_RFRX	15 mil
VREG_RFTX	15 mil
VREG_SYNT	15 mil
VREG_TCXO	15 mil
MIC_BIAS	15 mil
SPK_OUT+	10 mil
SPK_OUT-	10 mil
AUXOP	6 mil
AUXON	6 mil
KEYBD_BACKLIGHT	15 mil
HPH_L	8 mil
JACK_MIC+,-	6 mil
USB_D+,D-	6 mil
TCXO	8 mil
XTAL	8 mil
UHF_LO_BUFF	8 mil
MSM_TCXO	8 mil
MIC(FEEDBACK)	6 mil
MIC+,-	6 mil
VREG_UIM	10 mil
I,Q	w=4 mil s=4 mil
SBI	4 mil

LAYOUT no parallel lines allowed (SPK_OUT+, SPK_OUT-, AUXOP, AUXON)

RUIM Card

VREG_RUIM
TP484 TESTPOINT
R1019 R/4.7K/0402/5%
C1003 C/104K/10V/X5R/0402
C1007 C/101J/50V/COG/0402
TP472 TESTPOINT UIM_DATA
TP473 TESTPOINT UIM_CLK
TP474 TESTPOINT UIM_RESET
J1002 FBM05306-GB/Foxlink: GND, NC, DATA, VCC, RST, CLK
UIM_DATA, UIM_CLK, UIM_RESET
C1037 C/680J/50V/NPO/0402
C1008 C/101J/50V/COG/0402
C1009 C/101J/50V/COG/0402

RUIM CARD HOLDER: GND 3, 6 VCC; NC 2, 5 RST; UIM_DATA 1, 4 CLK

External DC

J1000 ME/DC_JACK/JPM5128-F007-7F/Foxconn
DC+
FUSE 1A/0603/littlefuse F1
D1006
C1030 C/330J/50V/NPO/0402
D1007
L101 BEAD/330ohm/1.5A/0.09ohm/0805
TP482 TESTPOINT
VEXT_DC

VPH_PWR
C730, C731
VREG_TCXO
R709 R/82K/0402/1%
TP707 TESTPOINT
L700 BEAD/BLM18EG221SN1D/muRata 220ohm/1A/0.15ohm/0603
BATT_TEMP
C714 C/103K/16V/X7R/0402
J700 BTT-K3S-00-7.7-TF/JST: BAT_VCC, BAT_TEMP, GND

TCXO
R704 R/0/0402/5%
TCXO shielded by GND
Y702 TCXO 19.2MHz TG-5001LA-31A EPSON: OUT, VCON, GND, VCC
R714 R/100/0402/5%
TRK_LO_ADJ
C712 C/103K/16V/X7R/0402
R703 R/0/0402/5%
VREG_TCXO
C724 C/102J/50V/X7R/0402
C704 C/104K/10V/X5R/0402

S1 SHEILDING_FRAME

PCB ID Resistor
V70 NI/R/0/0402/5%

Base Band - Top Level

1 2 3 4

D C B A

Base Band - Top Level

PM6610
PM6610.Sch
PS_HOLD
TCXO_EN
SBI_ST
SBI_CK
SBI_DT
TCXO
VEXT_DC
PWR_ON_SENSE_N
PMIC_AMUX
MSM_TCXO
MSM_SLEEP_CLK
PM_INT_N
VIB_EN
RESIN_N

TCXO
VEXT_DC

MSM6000
MSM6000.Sch
PMIC_AMUX
MSM_TCXO
MSM_SLEEP_CLK
PM_INT_N
PS_HOLD
TCXO_EN
UIM_RESET
UIM_CLK
UIM_DATA
FF_SPKR_P
FF_SPKR_N
FF_SPKR_EN
NetGM501_1
NetGM501_2
MICBIAS
JACK_EAR+
BATT_TEMP
HDET_CELL
PHONE_THERM
DAC_REF
RX_Q_N
RX_Q_P
RX_I_P
RX_I_N
EARPHONE_PRESS
JACK_MIC+
JACK_SENSE
NetC509_2
NetC510_2
TX_Q_P
TX_Q_N
TX_I_N
TX_I_P
KEYSENSE1_N
KEYSENSE2_N
KEYSENSE3_N
KEYSENSE4_N
LCD_SER_CS_N
LCD_SER_DATA
LCD_SER_CLK
LCD_SER_A0
BACKLIGHT
KYPD_9
KYPD_11
KYPD_13
KYPD_15
KYPD_17
RYBY
A22
A21
LB_N
RAM_CS2_N

UIM_RESET
UIM_CLK
UIM_DATA

AUDIO
AUDIO.SCH
FF_SPKR_P
FF_SPKR_N
FF_SPKR_EN
NetGM501_1
NetGM501_2
MICBIAS
JACK_EAR+
NetC510_2
NetC509_2
JACK_SENSE
JACK_MIC+
EARPHONE_PRESS

UI
UI.Sch
KYPD_17
KYPD_15
KYPD_13
KYPD_11
KYPD_9
VIB_EN
BACKLIGHT
RESOUT_N
LCD_SER_A0
LCD_SER_CLK
LCD_SER_DATA
LCD_SER_CS_N
PWR_ON_SENSE_N
KEYSENSE1_N
KEYSENSE2_N
KEYSENSE3_N
KEYSENSE4_N

TX_Q_P
TX_Q_N
TX_I_N
TX_I_P

MEMORY
MEMORY.SCH
RYBY
A22
A21
LB_N
RAM_CS2_N
RESIN_N
RESOUT_N
LOCK_DET
SBI_ST
SBI_CK
SBI_DT
TRK_LO_ADJ
TX_AGC_ADJ
TX_ON
PA_R1
PA_ON

SBI_ST
SBI_CK
SBI_DT
TRK_LO_ADJ
TX_AGC_ADJ
TX_ON
PA_R1
PA_ON

BATT_TEMP
HDET_CELL
PHONE_THERM
DAC_REF
RX_Q_N
RX_Q_P
RX_I_P
RX_I_N
LOCK_DET

1 2 3 4

PM6610

PM6610

VDD_MSMA = 2.6V
VDD_MSMC =2.75V
VDD_MSMP =2.95V
VREG_RUIM =3.0V
VREG_RFRX =2.65V
VREG_RFTX =2.65V
VREG_TCXO =2.85V

VREG_MSMA=20mil
VREG_MSMP=25mil
VREG_MSMC=20mil
VREG_TCXO=20mil
VREG_RUIM=20mil
VREG_RFTX=25mil
VREG_RFRX=25mil
VPH_PWR=80mil
VEXT_DC=80mil

Internal Layer is preferred
Shielded by GND

C703, R713 are connected to GND via REF_GROUD

ISNS_M and ISNS_P
must have the
same trace length

MSM6000

MSM6000

CCOMP_GND and CCOMP must be connected together then connect to GND

U401B MSM6000

Symmetrical layout
The traces should be as short as

Memory

Memory

MSM_UART1_TXD shielded by GN
MSM_UART1_RXD shielded by GN

Memory data bus should be parallel to each other

Audio

Audio

Audio Amplifier

Headset connector

User Interface

User Interface

VPH_PWR

BACKLIGHT

Q1 Q2SC4617TLR/Rohm

AR200 CN24JTN510/TA_I

VPH_PWR

CR700 DRB520S-30/SC-79

C726 C101J/50V/COG/0402

DN1700 ME/Vibrator/P0408B-31-P2H

TP709 TESTPOINT

VIB_EN

PWR_ON_SENSE_N

SW9 POWER

KYPD_13

KYPD_9

KYPD_11

KYPD_15

KYPD_17

VREG_MSMP

L401 BEAD/1000ohm/200mA/1ohm/0402

RESOUT_N

C407

J401 BTB/10/FML/0.5

C406 C104K/10V/X5R/0402

B LCD SER CS N

B LCD SER A0

B LCD SER CLK

B LCD SER DATA

GiantPlus FSTN

U402 LFA24-2A1A144MT

LCD SER DATA

LCD SER CLK

LCD SER A0

LCD SER CS N

TP447 TESTPOINT B LCD SER CLK

TP448 TESTPOINT B LCD SER DATA

TP449 TESTPOINT B LCD SER CS N

TP450 TESTPOINT B LCD SER A0

SW1 Short cut1/menu

SW7 Send

SW10 Short cut4/CLR

SW2 UP

SW4 LEFT

SW6 RIGHT

SW8 DOWN

SW11 1

SW12 2

SW13 3

SW14 4

SW15 5

SW16 6

SW17 7

SW18 8

SW19 9

SW20 *

SW21 0

SW22 #

KEYSENSE1_N

KEYSENSE2_N

KEYSENSE3_N

KEYSENSE4_N

RF - Top Level

1 2 3 4

D C B A

RF - Top Level

SBI_CK
SBI_ST
SBI_DT
TCXO
TX_Q_P
TX_Q_N
TX_I_N
TX_I_P
TX_ON
TX_AGC_ADJ

RFT6122
RFT6122.Sch
SBI_CK
SBI_ST
SBI_DT
TCXO
TX_Q_P
TX_Q_N
TX_I_N
TX_I_P
TX_ON
TX_AGC_ADJ
UHF_LO_BUFF
CP_RX
DAC_REF
LOCK_DET
CELL_OUT

DAC_REF
LOCK_DET

PA_R1
PA_ON

PA&ANT
PA&ANT.Sch
PA_R1
CELL_OUT
PA_ON
PHONE_THERM
RX_CELL
HDET_CELL

PHONE_THERM
HDET_CELL

RFR6122
RFR6122.Sch
CP_RX
RX_CELL
TCXO
SBI_DT
SBI_ST
SBI_CK
RX_I_N
RX_I_P
RX_Q_P
RX_Q_N
UHF_LO_BUFF

RX_I_N
RX_I_P
RX_Q_P
RX_Q_N

1 2 3 4

PA and ANT

PA and ANT

VREG_MSMP=25mil

VPH_PWR

Trace width MIN 30 MIL

C621 C/331K/50V/X7R/0402

C622 C/331K/50V/X7R/0402

C623 C/102J/50V/X7R/0402

C624 C/106K/6.3V/X5R/0805

PA_ON

C620 C/102J/50V/X7R/0402

PA_RI

C604 C/102J/50V/X7R/0402

VREG2.75V~2.95V

VMODE2.0V~2.8V

VDD3.2~4.2V

U7 SKY77162: VREF, VCONT, RF IN, VCC1, VCC2, RF OUT, GND

FL600 FAR-F5EA-836M50-D27A: IN, OUT, GND

CELL_OUT

C619 C/101J/50V/COG/0402

R600 NI/R/10K/0402/5%

VREG_MSMP

2.7~5.5V

U602 NI/LMV225: VDD, RFin, Out, GND

C609 MI/C/101J/50V/COG/0402

HDET_CELL

REF VDD 2.6~5.5

C610 NI/C/123K/16V/X5R/0402

R604 NI/R/1.5K/0402/5%

R621 C/8R2C/50V/COG/0402

TX_CELL

C613 NI/C/104K/10V/X5R/0402

C614 L/LQW15AN12NG00D/muRata 12nH/500mA/2%/0402/Wire Wound

RX_CELL

F600 FAR-DSCM-881M5-D1G8: TX, IND, ANT, GND, GND_SLUG

R606 NEAR TO PA

VREG_MSMA

R605 R/120K/0402/5%

PHONE_THERM

R606 NTC/THINKING/TSM0A683K4153RZ

P600 IN PAD

NETTP115_1

L601 R/0/0402/5%

L602 R/0/0402/5%

C615 NI/C0402

C616 L/15n/0402

S600 SW/MM8430-2600: OUT, IN, GND

RFT6122

RFT6122

TX_Q_P&N are differential pairs, they should symmetrical and parallel to each other, and the trace length should be the same. Besides, they should be shilded by GND and no other parallel signals are allowed. W: 4 mil; Space: 4 mil

TX_I_P&N are differential pairs, they should symmetrical and parallel to each other, and the trace length should be the same. Besides, they should be shilded by GND and no other parallel signals are allowed. W: 4 mil; Space: 4 mil

RFR6122

RFR6122

VREG_MSMP=25mil
VREG_RFRX=25mil

Near by RFR6122

CP_RX
C815 C/222K/25V/X7R/0402
C800 C/333K/10V/X7R/0402
R800 R/7.5K/0402/1%

U800
IN OUT1
CASEGND OUT2
CASEGND
FAR-F5EB-881M50-B28R

L801 R/0/0402/5%
C817 C/8R2C/50V/COG/0402
L805 L/82NH/100mA/5%/0402
C818 C/8R2C/50V/COG/0402
L806 L/82NH/100mA/5%/0402
L802 R/0/0402/5%

TCXO
RX_CELL
C816 C/102J/50V/X7R/0402
C813 C/270J/50V/COG/0402
L803 L/12NH/250mA/5%/0402
C821 NI/C/8R2C/50V/COG/0402

SBI_DT
SBI_ST
SBI_CK
R814 R/0/0402/5%
R815 BEAD/1000ohm/200mA/1ohm/0402
C822 C/270J/50V/COG/0402
R816 R/0/0402/5%

U801
VCO_TUNE
DNC
DCONV_INM
DCONV_INP
DNC
TCXO
LNA_IN
SBDT
SBST
SBCK
VDDA
VDDA
VDDA
VDDA
VDDA
VDDA
VDDA
VDDA
VDDM
LO_OUT
RX_IM
RX_IP
RX_QM
RX_QP
LNA_OUT
R_LNA
R_BIAS
GND
GND
GND
GND
GND
GND_SLUG
RFR6122

R811 N/R/820/0402/0.1%
R812 R/5.1K/0402/1%

VREG_MSMP
R806 R/100/0402/5%
C801 C/104K/10V/X5R/0402
VREG_RFRX
R801 R/0/0402/5%
C809 C/101J/50V/COG/0402
C802 C/104K/10V/X5R/0402
R802 R/0/0402/5%
C810 C/101J/50V/COG/0402
C805 C/104K/10V/X5R/0402
R803 R/0/0402/5%
C803 C/104K/10V/X5R/0402
R804 R/0/0402/5%
C811 C/101J/50V/COG/0402
C804 C/104K/10V/X5R/0402
C808 C/225M/6.3V/X5R/0603
R805 R/0/0402/5%
C806 C/104K/10V/X5R/0402
UHF_LO_BUFF

R807 R/1K/0402/1%
C819 C/8R2C/50V/COG/0402
R808 R/1K/0402/1%
R809 R/1K/0402/1%
C820 C/8R2C/50V/COG/0402
R810 R/1K/0402/1%
RX_I_N
RX_I_P
RX_Q_N
RX_Q_P

RX_Q_P&N are differential pairs, they should symmetrical and parallel to each other, and the trace length should be the same (as short as possible). Besides, they should be shilded by GND and no other parallel signals are allowed. W: 4 mil; Space: 4 mil (the RC components should be placed near by U800)

RX_I_P&N are differential pairs, they should symmetrical and parallel to each other, and the trace length should be the same (as short as possible). Besides, they should be shilded by GND and no other parallel signals are allowed. W: 4 mil; Space: 4 mil (the RC components should be placed near by U800)

R813 R/1K/0402/5%
L807 L/120NH/200mA/5%/0402
C812 C/101J/50V/COG/0402
C807 C/104K/10V/X5R/0402
L804 L/12NH/250mA/5%/0402
C814 C/220J/50V/COG/0402

1255 (RH-79) Component Layout - Top

X axis
40mm 35mm 30mm 25mm 20mm 15mm 10mm 05mm

Y axis
100mm 95mm 90mm 85mm 80mm 75mm 70mm 65mm 60mm 55mm 50mm 45mm 40mm 35mm 30mm 25mm 20mm 15mm 10mm 05mm 0,0

1255 (RH-79) Component Layout - Bottom

T60N888
Rev:8
19.2036

X axis: 40mm, 35mm, 30mm, 25mm, 20mm, 15mm, 10mm, 05mm

Y axis: 100mm, 95mm, 90mm, 85mm, 80mm, 75mm, 70mm, 65mm, 60mm, 55mm, 50mm, 45mm, 40mm, 35mm, 30mm, 25mm, 20mm, 15mm, 10mm, 05mm, 0,0

